CLAIMS

What is claimed is:

1. A bare semiconductor die assembly including a plurality of semiconductor die, comprising:

a substrate including a plurality of conductors;

at least one active face-down base die in electrical communication with at least one conductor;

at least one active face-up stack die attached back-to-back to said base die; and

means for electrically connecting said stack die to at least one conductor.

2. The assembly of claim 1, wherein said stack die includes at least one bond pad.

3. The assembly of claim 2, wherein said means for electrically connecting said stack die to said at least one conductor is a bond wire extending between said at least one bond pad and said at least one conductor.

4. The assembly of claim 1, further comprising a first adhesive interposed between said base die and said stack die.

5. The assembly of claim 4, further comprising at least one discrete component adhered to said first adhesive, and a die-to-component bond wire electrically connecting said stack die to said component.

6. The assembly of claim 4, further comprising at least one discrete component adhered to said first adhesive, and a component-to-substrate bond wire electrically connecting said stack die to a substrate conductor.

7. The assembly of claim 1, further comprising a second stack die and means for electrically connecting said second stack die to a substrate conductor.

8. The assembly of claim 7, wherein said second stack die includes at least one bond pad.

9. The assembly of claim 8, wherein said means for electrically connecting said second stack die to said substrate conductor is a bond wire extending between said at least one bond pad and said at least one conductor.

10. The assembly of claim 7, wherein said second stack die is attached to said stack die.

11. The assembly of claim 10, further comprising a second adhesive interposed between said second stack die and said stack die.

12. The assembly of claim 11, further comprising at least one discrete component adhered to said second adhesive, and a die-to-component bond wire connecting said second stack die to said component.

13. The assembly of claim 11, further comprising at least one discrete component adhered to said second adhesive, and a component-to-substrate bond wire connecting said component to a substrate conductor.

14. The assembly of claim 10, further comprising at least one discrete component adhered to said first adhesive, a die-to-component bond wire connecting said second stack die to said component, and a component-to-substrate bond wire connecting said component to a substrate conductor.

15. The assembly of claim 1, further comprising a second active face-down base die in electrical communication with a substrate.

16. The assembly of claim 15, wherein at least one said stack die bridges said base die and second base die.

17. The assembly of claim 16, further including at least one discrete component secured to said substrate, and a component-to-substrate bond wire electrically connecting said stack die to said component.

18. The assembly of claim 1, further including at least one discrete component secured to said substrate, and a component-to-substrate bond wire electrically connecting said stack die to said component.

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19. A method of fabricating a multi-die assembly, comprising:
providing a substrate including a plurality of conductors;
attaching at least one active face-down base die to said substrate in electrical communication with at least some of said conductors;
securing the back side of at least one active face-up stack die to said base die; and
electrically connecting said stack die to at least one of said conductors.

20. The method of claim 19, wherein said electrically connecting said at least one stack die to said at least one conductor comprises wire bonding.

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21. The method of claim 19, further comprising:
securing at least one discrete component to said base die; and
extending a die-to-component bond wire between said at least one stack die and said component.

22. The method of claim 19, further comprising:
securing at least one discrete component to said base die; and
extending a component-to-substrate bond wire between said component and a substrate conductor.

23. The method of claim 19, further comprising:
securing a second stack die to said assembly; and
electrically connecting said second stack die and at least one substrate conductor.

24. The method of claim 23, wherein electrically connecting said second stack die to said at least one conductor comprises wire bonding.

25. The method of claim 23, further comprising securing said second stack die to said stack die.

26. The method of claim 25, further comprising:
securing at least one discrete component to said stack die; and
extending a die-to-component bond wire between said second stack die and said component.

27. The method of claim 26, further comprising:
securing at least one discrete component to said stack die; and
extending a component-to-substrate bond wire between said component and a substrate conductor.

28. The method of claim 25, further comprising:
securing at least one discrete component to said base die; and
extending a die-to-component bond wire between said second stack die and said component.

29. The method of claim 25, further comprising:
securing at least one discrete component to said base die; and
extending a component-to-substrate bond wire between said component and a conductor.

30. The method of claim 19, further comprising attaching a second active face-down base die to said substrate in electrical communication with at least one of said conductors.

31. The method of claim 30, further comprising bridging said stack die between said base die and second base die.

32. The method of claim 31, further comprising securing a second stack die over said stack die.

33. The method of claim 19, further comprising:
securing at least one discrete component to said substrate; and
extending a die-to-component bond wire between said at least one stack die and said component.

34. The method of claim 31, further comprising:
securing at least one discrete component to said substrate; and
extending a die-to-component bond wire between said at least one stack die and said component.